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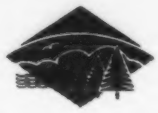

PESTICIDE STORAGE:

Regulatory Requirements and Guidelines
(Schedule 1 & 2 Pesticides)

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Provincial Regulation of Storage of Pesticides

The storage of pesticides is regulated provincially under:

(1) the *Environmental Protection and Enhancement Act* (EPEA) for aspects of pesticide storage related to spill cleanup and containment;

(2) the *Safety Codes Act* (Alberta Building and Fire Codes) for aspects related to structural integrity and fire prevention; and

(3) the *Occupational Health & Safety Act* for aspects related to worker exposure to pesticides.

In addition, municipal bylaws may restrict the location of pesticide storage facilities to specific industrial areas. Any person who stores pesticide is responsible to ensure that they have met all regulated requirements.

Purpose of Document

The **Pesticide Storage: Regulatory Requirements and Guidelines (Schedule 1 & 2)** is neither a legal document or a complete listing of current pesticide storage regulations. It is a summary of the *Environmental Protection and Enhancement Act (EPEA)* regulatory requirements and operational guidelines for the safe display, storage and handling of pesticides and the management of pesticide releases. It identifies minimum risk management measures for storing pesticides and provides an overview of what an inspector under the *EPEA* will be assessing during site inspection of a storage facility. Details of the pesticide storage regulations are included in the Pesticide Sales, Handling, Use and Application Regulation (being Alberta Regulation 24/97) and are available from the Queen's Printer Bookstore. (revised April 29,1997), or on the Internet by accessing:

http://www.gov.ab.ca/qp/

Who is affected by the *EPEA* Pesticide Storage Requirements?

The storage requirements and operational guidelines apply to anyone who stores pesticides listed in Schedules 1 and 2 of the provincial pesticide regulations. This document applies to pesticide wholesalers, retailers, warehouse distribution centres, custom pesticide applicators, and other pesticide services (includes government, government agencies and irrigation districts).

The requirements do not apply to pesticides listed in Schedules 3 and 4 of the Pesticide (Ministerial) Regulation or to an individual storing pesticides for personal use on property that the individual owns. This includes a farmer (commercial agriculturalist), unless the pesticide is being stored, sold or used as part of a pesticide service or pesticide vendor operation.

Alberta Environment will recognize a pesticide storage facility that meets the Agrichemical Warehousing Standards Association's (AWSA) warehousing standards. This is in the form of a valid **AWSA Phase III Certification of Compliance** indicating the facility has met provincial regulatory requirements. In the event where a storage facility presents a potential adverse effect that was not addressed by the AWSA's warehousing standards, Alberta Environment will work with the AWSA and the storage facility owner to resolve environmental protection concerns. Any pesticide storage facility located within 30 horizontal metres of an "open body of water" must have an approval from the Department.

What is a Pesticide Storage Facility?

A **storage facility** is a place where pesticides are stored including, without limitation, a building, a room, a cabinet, a storage tank, a compound, or compartment in a building or a vehicle. A vehicle that has a compartment for storing pesticides is referred to in this document as a **mobile storage vehicle**.

A pesticide storage facility is **NOT**:

- a mobile storage vehicle, where the combined amount of pesticide product in storage does not exceed 10 litres (liquid) or 10 kilograms (dry), or
- a pesticide mixing and loading site where the amount of pesticide present does not exceed the amount required for use that day and where the pesticide mixing and loading site is in accordance with the *Environmental Code of Practice for Pesticides* published by Alberta Environment.

Pesticide Storage Requirements

Anyone who stores pesticide is responsible to take basic measures to protect human health and the environment.

Pesticides must be stored:

- **in a place and a manner that will not cause an adverse effect. "Adverse effect" is defined in the *EPEA* to mean "impairment of or damage to the environment, human health or safety or property".**

- **in a manner to prevent contact with or contamination of any animal, plant, food or drink.**

- **separately from:**
  - **"groceries" (fresh or frozen meat, fresh or frozen produce, fresh dairy products, unwrapped baked goods, etc.),**
  - **"food" (packaged items such as cookies, nuts, candy, beverages, etc), and**
  - **"personal use items" (drugs, cosmetics, first aid and medical supplies, personal hygiene products and disposable diapers).**

- **away from water sources**.

  Pesticide stored within 30 horizontal metres of an **open body of water** (lake, river, stream or irrigation canal) requires an approval from Alberta Environment. Information on **Pesticide Special Use Approvals** can be obtained from any of the Alberta Environment Corporate Regional Offices.

- **on sites which are not subject to flooding.**

  The grounds on which a storage facility is located must be able to withstand a 24-hour, 1 in 25 year storm without flooding.

Pesticides that are stored outdoors must be protected from rain, wind and other weather hazards. This will help to ensure integrity of the product, packaging and the label.

Open containers or packages must be closed or repackaged in a manner that controls odours and vapours.

Pesticide Storage Facilities must:

- **be secured from public access**.

  The storage facility must have doors or gates that remain closed and locked at all times except when authorized personnel are present at the storage site. Windows where present must be secured to prevent unauthorized entry.

  Outdoor storage facilities must be fenced to prevent unauthorized entry. A mobile storage vehicle can meet this requirement either by having a cabinet or compartment that can be closed and locked or by parking the vehicle in a secured area.

- **have a warning sign affixed to the exterior door, entrance or gate of the storage facility**.

The warning sign is to be legible and bear the words PESTICIDE STORAGE, AUTHORIZED PERSONS ONLY - WARNING IN CASE OF FIRE USE EXTREME CAUTION or similar wording acceptable to an inspector. This does not apply to a mobile storage vehicle where regulated products under the *Transportation of Dangerous Goods Act* are being transported and the appropriate placards are in place.

- **be designed or located on the storage site to ensure that any release of pesticide concentrate can be contained within the boundaries of the storage site (i.e. the grounds of the storage facility).** *(Revised April 16, 1997)*

The measures for control of a release can include one or more of the following:

- diking by means of non-combustible curbs, sills or mounds;
- sloping by means of grading the site or sloping the floor in order to direct the release to a collection point; or
- using a secondary containment system such as doubled walled tanks, a "spill tray" or over pack.

The measures for control of a release should address the capability of retaining up to 110% of the liquid volume stored, and being constructed of non-combustible materials as defined by the Alberta Building Code. A storage facility with less than 110% containment may be permitted where an Alberta Environment inspector and the local fire authority are satisfied that adequate release control measures are in place. In most cases, this would be where the release control containment capacity is not less than the volume of the largest container plus 10% of the aggregate volume of the total pesticide (liquid and dry) in storage.

When a dike is used to contain pesticide releases and contaminated materials from an above ground storage tank it must be designed, constructed and maintained in accordance with good engineering practice, the Alberta Building Code 1997, and the Alberta Fire Code 1997 – **see Appendix 1.**
(revised June 15, 1999).

- **have a floor or base that is protected from pesticide absorption.**

The floor or base of a storage facility must have all joints sealed and cracks repaired, and the floor or base must be able to resist the absorption of a liquid.

Floor drains or storm drains leading directly or indirectly into a wastewater system, storm drainage system, waterworks system, a potable water source (eg. water wells), groundwater or an open body of water must be protected from accidental pesticide entry.

Operator's Requirements

Persons responsible for the pesticide storage facility must be knowledgeable of release cleanup and fire response procedures. Pesticide release response information must be readily accessible to personnel at the storage site.

- A sketch of the surrounding area should be available indicating:
  - the drainage pattern including the location and distance of the storage facility from drains that lead into a waste water system and storm drainage system;
  - waterworks systems sources, water wells and other water sources;
  - open bodies of water; and
  - adjacent land uses.

(The above site sketch is not applicable to a mobile storage vehicle.)

- A contingency plan should be available to deal with pesticide releases and to prevent pesticides from entering into any storm drainage system or waste water system, reservoir of a waterworks system, water well or surface water.

- Pesticide labels and material safety data sheets (where available) for pesticides being stored must be accessible at the storage facility.

- A monitored 24-hour answering service or a 24-hour emergency contact for the storage facility should be available. A list of emergency response telephone numbers must be available for:
  - the provincial Poison Centre (1-800-332-1414),
  - Alberta Environment's Emergency Response/Complaints (1-800-222-6514),
  - the local fire department, local police Department, and the local hospital **unless** 911 service is available, and
  - the manufacturers or suppliers of the pesticides.

  A mobile storage vehicle must have the emergency telephone numbers for the Poison Centre and Alberta Environment's Emergency Response/Complaints readily available in the vehicle.

Pesticide releases that extend beyond the storage facility (including odours) must be reported to Alberta Environment **(1-800-222-6514)** within 24 hours. A *Release Reporting Guideline* is available from any of the Alberta Environment Corporate Regional Offices.

Emergency Response Equipment

Emergency response equipment (including personal protection equipment and release cleanup material) must be available at the storage facility. All personnel who could be involved in emergency response must know the location of this equipment.

Personal Protective Equipment must include:

- chemical-resistant gloves;
- coveralls;
- chemical-resistant boots;
- eye protection;
- suitable cartridge respirators including extra cartridges for reusable respirators;
- first aid kit; and
- emergency eyewash or emergency shower on site.

Spill clean-up materials must include:

- appropriate absorbent materials such as vermiculite, kitty litter, dry coarse clay, or commercial absorbent;
- appropriate neutralizing materials, such as hydrated lime, bleach, or activated charcoal;
- a broom;
- a shovel; and
- containers with lids for waste material or leaking containers and supplies to label the contents of waste containers.

4.3.7. Secondary Containment for Aboveground Storage Tanks

4.3.7.1. General

(1) The area surrounding a *storage tank* or group of *storage tanks* shall be designed to accommodate accidental spillage in conformance with Subsection 4.1.6.

(2) Where barriers described in Sentence 4.1.6.1(1) are provided to contain accidental spillage from aboveground *storage tanks*, they shall conform to the requirements for secondary containment in this Subsection.

(3) A *storage tank* conforming to Sentence 4.3.7.4(2) shall be considered as conforming to this Subsection provided it is used and maintained in conformance with Articles 4.3.7.8. and 4.3.7.9.

4.3.7.2. Construction

(1) Except as provided in Sentence (2), the base and walls of a secondary containment shall be made of noncombustible materials, and shall be designed, constructed and maintained to

(a) withstand full hydrostatic head, and

(b) provide a permeability of not more than 10^{-6} cm/s to the *flammable liquids or combustible liquids* contained in the *storage tanks*.

(2) Where a membrane provides the level of impermeability required in Sentence (1), it shall

(1) conform to ULC/ORD-C58.9, "Secondary Containment Liners for Underground and Aboveground Flammable and Combustible Liquid Tanks," and

(2) when the membrane is combustible, be covered with a noncombustible material of such nature and thickness that the membrane will not fail when the secondary containment is exposed to fire.

(3) Except as provided in Sentence (4), openings shall not be permitted in a secondary containment.

(4) Where piping passes through a secondary containment, such passages shall conform to Sentences (1) and (2).

4.3.7.3. Capacity

(1) Except as permitted in Sentence (3), a secondary containment for a single *storage tank* shall have a volumetric capacity of not less than 110% of the capacity of the tank.

(2) Except as permitted in Sentence (3), a secondary containment for more than one *storage tank* shall have a volumetric capacity of not less than the sum of

(a) the capacity of the largest *storage tank* located in the contained space, and

(b) 10% of the greater of

(i) the capacity specified in Clause (a), or

(ii) the aggregate capacity of all other *storage tanks* located in the contained space.

(3) When the secondary containment is designed to prevent the entry of precipitation and water used for fire fighting purposes into the contained space, it shall have a volumetric capacity of not less than the capacity of the largest *storage tank* located in the contained space.

4.3.7.4. Clearance

(1) Except as provided in Sentence (2), no part of a secondary containment wall shall be less than 1.5 m from a *storage tank* shell.

(2) It is permitted to waive the distance required in Sentence (1) provided the *storage tank*

(a) is constructed in accordance with Clauses 4.3.1.2.(1)(j), (), (m) and (o), incorporating secondary containment,

(b) has a capacity of not more than 50 000 L, and
(c) is protected by posts or guardrails when exposed to collision damage.

4.3.7.5. Access to Storage Tanks and Ancillary Equipment

(1) A secondary containment shall permit
(a) access to storage tanks, valves and ancillary equipment,
(b) egress from the contained space, and
(c) access for fire fighting as specified in Article 4.3.2.4.
(2) Where a *storage tank* contains Class I liquids, provision shall be made for the normal operation of valves and for access to the *storage tank* roof without entering the contained space created by the secondary containment when
(a) the average height of the secondary containment exceeds 3.5 m, measured from the ground level of the interior of the contained area, or
(b) the distance between the tank shell and the top inside edge of the secondary containment wall is less than the height of this wall.

4.3.7.6. Emergency Venting

(1) Where the secondary containment is not open to the atmosphere, emergency venting shall be provided to relieve any buildup of internal pressure in the contained space when exposed to heat or fire.

4.3.7.7. Leak Detection

(1) Where the contained space created by the secondary containment is not accessible for visual examination, a monitoring device shall be provided to indicate the presence of liquid in, or the loss of integrity of the secondary containment.

4.3.7.8. Drainage

(1) Liquids, debris and precipitation shall not accumulate in the contained space created by the secondary containment.
(2) Provisions shall be made for removing liquid from the secondary containment in conformance with Subsection 4.1.6.
(3) Controls for the liquid removal system required in Sentence (2) shall be
(a) normally closed,
(b) accessible under fire exposure conditions, and
(b) located so they can be operated from outside the contained space.
(4) Centrifugal type pumps shall not be used to transfer water contaminated with *flammable liquids* or *combustible liquids* from diked areas to a collection system.

4.3.7.9 Use of Secondary Containment

(1) The contained space created by a secondary containment shall not be used for storage purposes.